Table S1. Results of analyses of whole versus the subset of data of certain wakefulness.

Table cells containing significant values (i.e. $p < 0.05$) are highlighted.

Statistical test		Entire dataset	Subset of wakefulness
Theta power between wildtypes and *Sp4* hypomorphics	Fr	$p = 7.57\times10^{-6}$	$p = 1.06\times10^{-3}$
	Pa	$p = 0.0503$	$p = 0.222$
	Oc	$p = 0.716$	$p = 0.987$
Theta phase difference between wildtypes and *Sp4* hypomorphics	Fr-Pa	$p = 6.26\times10^{-7}$	$p = 5.49\times10^{-5}$
	Oc-Pa	$p = 2.09\times10^{-5}$	$p = 1.56\times10^{-4}$
Theta phase concentration between wildtypes and *Sp4* hypomorphics	Fr-Pa	$p = 4.79\times10^{-5}$	$p = 0.0905$
	Oc-Pa	$p = 0.669$	$p = 0.0738$
Theta spectral coherence between wildtypes and *Sp4* hypomorphics	Fr-Pa	$p = 1.77\times10^{-4}$	$p = 0.0200$
	Oc-Pa	$p = 0.962$	$p = 0.304$
Ketamine-induced change of theta power in wildtypes	Fr	$p = 0.128$	$p = 0.128$
	Pa	$p = 1.00$	$p = 1.00$
	Oc	$p = 0.0203$	$p = 0.0326$
Ketamine-induced change of theta power in *Sp4* hypomorphics	Fr	$p = 1.55\times10^{-4}$	$p = 0.0104$
	Pa	$p = 0.0499$	$p = 0.105$
	Oc	$p = 0.665$	$p = 0.585$
Ketamine-induced changes of theta phase difference in both genotype groups	Fr-Pa Oc-Pa	$p > 0.05$ for all	$p > 0.05$ for all
Ketamine-induced change of theta phase concentration in wildtypes	Fr-Pa	$p = 0.0262$	$p = 0.0262$
	Oc-Pa	$p = 7.47\times10^{-7}$	$p = 7.47\times10^{-7}$
Ketamine-induced change of theta spectral coherence in wildtypes	Fr-Pa	$p = 0.128$	$p = 0.259$
	Oc-Pa	$p = 9.25\times10^{-7}$	$p = 2.62\times10^{-5}$
Ketamine-induced change of theta phase concentration in *Sp4* hypomorphics	Fr-Pa	$p = 0.0207$	$p = 0.721$
	Oc-Pa	$p = 0.137$	$p = 0.0438$
Ketamine-induced change of theta spectral coherence in *Sp4* hypomorphics	Fr-Pa	$p = 0.0207$	$p = 0.721$
	Oc-Pa	$p = 0.235$	$p = 0.137$